

IN THE CLAIMS

1 1. (Currently Amended) A method for designing a system on a target device utilizing a
2 programmable logic devices (PLD) with an electronic automation design tool (EDA),
3 comprising:

4 having the EDA tool determine a first location on the PLD to place a user defined logic
5 region in response to user specified constraints for placement of the user defined logic region;
6 and

7 having the EDA tool determine a second location to place the user defined logic region,
8 wherein the second location is determined independent of the user specified constraints for
9 placement.

1 2. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2 determine the second location is performed in response to the first location not satisfying design
3 parameters.

1 3. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2 determine the second location is performed in response to the first location not satisfying the user
3 specified constraints.

1 4. (Currently Amended) ~~The method of Claim 1, wherein having the EDA tool~~
2 ~~determine the second location is performed~~A method for designing a system on a target device
3 utilizing a programmable logic device (PLD), comprising:
4 determining a first location on the PLD to place a user defined logic region in response
5 to user specified constraints for placement of the user defined logic region; and

1 determining a second location to place the user defined logic region, wherein the second
2 location is determined independent of the user specified constraints for placement in response to
3 having a threshold number of optionsfirst locations generated.

1 5. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2 determine the second location is performed in response to a triggering event.

1 6. (Previously Presented) The method of Claim 1, further comprising determining
2 positions to place components within user defined logic regions on the target device.

1 7. (Previously Presented) The method of Claim 6, wherein determining positions to
2 place the components is an iterative procedure that includes:
3 selecting positions;
4 evaluating the positions with a cost function; and
5 accepting the positions if the cost function yields a desired value.

1 8. (Previously Presented) The method of Claim 6, wherein determining the positions
2 comprises removing constraints associated with the user defined logic regions.

1 9. (Previously Presented) The method of Claim 1, further comprising determining
2 routing resources to allocate to user specified signals on the target device in response to user
3 specified routing constraints.

1 10. (Original) The method of Claim 9, wherein determining routing resources is an
2 iterative procedure that includes:
3 selecting routing resources;

1 determining whether routing resource selections satisfy the user specified routing
2 constraints; and
3 re-selecting routing resources if the routing resource selections do not satisfy the user
4 specified routing constraints.

1 11. (Previously Presented) The method of Claim 9, wherein re-selecting the routing
2 resources comprises determining routing resources to allocate to the user specified signals on the
3 PLD by removing the user specified routing constraints.

1 12. (Currently Amended) A method for positioning components of a system onto a
2 target device utilizing a programmable logic devices (PLDs) using an electronic design
3 automation tool, comprising:
4 having the EDA tool determine a first location on the PLD to place a user defined logic
5 region in response to user specified constraints for placement of the user defined logic region;
6 determining whether the user specified constraint is a soft constraint in response to the
7 system not satisfying timing; and
8 having the EDA tool determine a second location to place the user defined logic region,
9 wherein the second location is determined independent of the user specified constraints for
10 placement if the user specified constraint is a soft constraint.

1 13. (Previously Presented) The method of Claim 12, wherein determining the first
2 location to place the user defined logic region comprises:
3 assigning an initial location for the user defined logic region;
4 moving the user defined logic region to a new location; and
5 evaluating a cost function associated with the user defined logic region in the new
6 location.

1 14. (Original) The method of Claim 13, wherein evaluating the cost function comprises:
2 determining a timing of the system associated with the user defined logic region in the
3 new location; and
4 determining routing resources requirements associated with the user defined logic region
5 in the new location.

1 15. (Currently Amended) The method of Claim 12, further comprising determining
2 possible locations to place a component in the user defined logic region ~~comprises~~that includes:
3 assigning an initial location for the component in the user defined logic region; and
4 evaluating a cost function as the user defined logic region and the component are moved.

1 16. (Previously Presented) The method of Claim 15, further comprising determining
2 possible locations to move the component from the possible locations to place the component
3 independent of the constraints associated with the user defined logic region.

1 17. (Currently Amended) The method of Claim 16, wherein determining possible
2 locations to move the component is performed in response to the possible locations ~~to~~ not
3 satisfying user specified constraints.

1 18. (Currently Amended) The method of Claim 12, wherein determining possible
2 locations to move the component ~~the second location~~ is performed in response to having a
3 threshold number of possible~~first~~ locations determined.

1 19. (Currently Amended) A method for designing a system on a programmable logic
2 devices (PLDs) using an electronic design automation (EDA) tool, comprising:

1 having the EDA tool determine routing strategies for routing signals on the PLDs in
2 response to user specified routing constraints that pertain to categories of routing resources to
3 use; and

4 having the EDA tool determine additional routing strategies for routing the signals on the
5 PLDs where the additional routing strategies are independent of the user specified routing
6 constraints.

1 20. (Original) The method of Claim 19, wherein determining routing strategies for
2 routing the signals on the PLDs in response to user specified routing constraints comprises:
3 selecting routing resources for a user specified signal on the PLDs in response to the user
4 specified routing constraints; and
5 selecting routing resources for a non-user specified signal on the PLDs without utilizing
6 the user specified routing constraints.

1 21. (Original) The method of Claim 19, wherein determining additional routing
2 strategies for routing the signals comprises selecting routing resources for the user specified
3 signal on the PLDs independent of the user specified routing constraints.

1 22. (Original) The method of Claim 19, wherein determining additional routing
2 strategies for routing the signals is performed in response to the routing strategies not satisfying
3 user specified routing constraints.

1 23. (Original) The method of Claim 19, wherein determining additional routing
2 strategies for routing the signals is performed in response to the routing strategies not satisfying
3 design parameters.

1 24. (Original) The method of Claim 19, wherein determining additional routing
2 strategies for routing the signals is performed in response to a threshold number of routing
3 strategies being determined.

1 25. (Previously Presented) A machine-readable medium having stored thereon
2 sequences of instructions, the sequences of instructions including instructions which, when
3 executed by a processor, causes the processor to perform:

4 determining a first location on a programmable logic device (PLD) to place a user
5 defined logic region in response to user specified constraints for placement of the user defined
6 logic region; and

7 determining a second location to place the user defined logic region wherein the second
8 location is determined independent of the user specified constraints for placement.

1 26. (Previously Presented) The machine-readable medium of Claim 25, wherein
2 determining the second location is performed in response to the first location not satisfying
3 design parameters.

1 27. (Previously Presented) The machine-readable medium of Claim 25, wherein
2 determining the second location is performed in response to the first location not satisfying the
3 user specified constraints.

1 28. (Currently Amended) ~~The machine-readable medium of Claim 25, wherein~~
2 ~~determining the second location is performed~~A machine-readable medium having stored thereon
3 sequences of instructions, the sequences of instructions including instructions which, when
4 executed by a processor, causes the processor to perform:

1 determining a first location on a programmable logic device (PLD) to place a user
2 defined logic region in response to user specified constraints for placement of the user defined
3 logic region; and
4 determining a second location to place the user defined logic region wherin the second
5 location is determined independent of the user specified constraints for placement in response to
6 having a threshold number of first locations determined.

1 29. (Previously Presented) The machine-readable medium of Claim 25, wherein
2 determining the second location is performed in response to a triggering event.

1 30. (Currently Amended) The machine-readable medium of Claim 25, further
2 comprising determining locations to place components within user-defined logic regions on the
3 target device.

1 31. (Currently Amended) The machine-readable medium of Claim 30, further
2 comprising determining locations to place the components on the target device by removing
3 constraints associated with the user-defined logic regions.

1 32. (Previously Presented) The machine-readable medium of Claim 25, further
2 comprising determining routing resources to allocate to user specified signals on the target
3 device in response to user specified routing constraints.

1 33. (Previously Presented) The machine-readable medium of Claim 32, further
2 comprising ignoring the user specified routing constraints.